

# **Pulsational instability in massive stars: implications for supernova and LBV progenitors**

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Most massive stars experience a pulsational instability induced by  $\kappa$ -mechanism, when the surface temperature sufficiently decreases. The amplitude of pulsations grows very fast, and may result in very high mass loss rates. We propose a new scenario for massive star evolution based on our new calculations of this pulsational instability, where the initial mass of SNe progenitors increases according to the order:

SN IIp  $\rightarrow$  SN II<sub>n</sub>  $\rightarrow$  SN IIL  $\rightarrow$  SN IIb  $\rightarrow$  SN Ib/c.

Moreover, the pulsation appears strong in the early core He-burning stage for  $M \geq 40 M_{\odot}$ , and may lead to the formation of LBVs. We also argue that stellar eruptions like SN 2008S may be related to this instability.